

### ABSTRACT

A variable geometry turbocharger employs multiple vanes in the turbine inlet with a unison ring and integral cast wall in the turbine housing forming the nozzle walls. The unison ring incorporates actuation slots receiving tabs on the vanes for opening the closing the nozzle area upon rotation of the unison ring. An integral electrohydraulic actuator rotates the unison ring through a rack and pinion driven crank shaft with direct position feedback to the spring biased variable current solenoid via a cam on the crank shaft.